Street and Roadway Lighting

Application Guide

Safer Streets with Dramatically Better Visibility and a Maximized Bottom Line
Staying within your city’s budget can be challenging. Cree® LED luminaires can help maximize your bottom line by reducing the amount of energy and money you spend on maintaining your street lighting system.

By delivering a low total cost of ownership with a typical energy savings of 30-70 percent over traditional lighting sources, near zero maintenance costs, and fast payback, upgrading to LED lighting just makes sense.

Upgrade municipal lighting in streets, public buildings, walkways, parking structures, and common areas. Not only will this help keep your operating and maintenance budget in check, it will provide dramatically better visibility — making public areas safe and secure.

- Proven quality & performance
- Ultra-efficient lighting
- Lifetime energy savings
- Reduced maintenance costs
- Easy installation & retrofitting
- Long-term financial benefits
Cree® LED luminaires offer uncompromising pure white light that renders more true-to-life color — a sharp and beautiful contrast to the yellow hues of the high-pressure sodium fixtures of the past.

In addition, Cree outdoor fixtures are sealed with our exclusive Colorfast DeltaGuard® finish that protects from fading, ultraviolet light, and corrosion — keeping fixtures looking great for years to come.

**Keep the City Beautiful**

Cree Ledway Road
- Modular system (from 20 to 120 LEDs)
- Durable, die-cast aluminum housing
- Patented NanoOptic® Technology
- CRI: Minimum 70 CRI
- CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)
- Luminous flux control systems available
- Adjustable arm mount

Cree OSQ Series
- Slim, low profile design
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI (4000K & 5700K); 80 CRI (3000K)
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous flux control systems available

Cree XSP Series
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous flux control systems available
- Tool-less entry

Cree XSPR Series
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 4000K (+/- 300K), 5700K (+/- 500K)
- Die cast aluminum housing with UV stabilized polymeric door for long weathering and reliability

Cree Edge™ High Output
- Designed to deliver a higher lumen output packages with precise optical control
- Utilizes Cree TrueWhite® Technology on 5000K Luminaires
- CCT: 5700K (+/- 500K) Standard, 5000K (+/- 300K), 4000K (+/- 300K)
- Luminous flux control systems available
A Bright Idea - Energy Savings with Improved Performance

Located in the Irish midlands in County Laois, Portlaoise is one of Ireland’s fastest growing modern towns with an international community, a unique culture and a stunning history.

In September 2014, the County Council decided to start replacing old street lights and to introduce LED luminaires to three main streets of the town. After evaluating traditional lighting technology already adopted in past projects, the County Council chose Cree® LED luminaires.

The installation of more than 200 Cree® XSP LED luminaires is the first pilot green program for the town and the County. The long term objective includes plans to upgrade the entire lighting system of the town, fully switching to LEDs.
Be Sustainable

Meet sustainability objectives by reducing energy consumption, light pollution, greenhouse gas emissions, and hazardous waste with Cree® LED luminaires.

A typical street light runs 11.5 hours per day or 4,200 hours per year, consuming much of a city’s overall energy usage. Cree LED luminaires can help reduce this energy consumption by 30-70 percent compared with traditional light sources.

Cree OSQ Series
- Slim, low profile design
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI (4000K & 5700K), 80 CRI (3000K)
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous flux control systems available

Cree XSP Series
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 4000K (+ / - 300K), 5700K (+ / - 500K)
- Luminous flux control systems available
- Tool-less entry

Cree RKT Series
- Traditional post-top upgrade kit
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K or 4000K or 5700K
- Easy installation

Cree XSP W
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 4000K (+ / - 300K)
- Slim, low profile design
- Luminaires can be direct mounted to a wall and surface wired
- Conduit entry from top, bottom, sides, and rear
Sirolo is a picturesque medieval town located in the heart of the Riviera del Conero, near the Monte Conero and the Adriatic sea, offering an eclectic mix of historic and natural attractions and activities that appeal to tourists and locals alike. While the residents take great pride in their heritage, they also believe strongly in the importance of looking forward and preserving the environment for future generations. Situated next to the Parco del Conero, Sirolo has always put a careful importance on using the right lighting, so, upgrading the street lights to energy efficient LED was a natural evolution.

As a result, Sirolo replaced more than 300 outdated street lights with Cree® XSP Series LED luminaires anticipating a reduction in annual energy usage of 64%. The town’s update plan will be completed with a further installation of 200 Cree® RKT Series luminaires in the historic central piazza and surroundings, preserving the existing lanterns and classical look of the streetscape.
Solutions that Meet Your Expectations

Outdoor lighting is often met with challenges that vary from project to project and from location to location. When working in an urban context, performance and efficiency are no longer the only considerations. It’s here that our products offer their best to the designer.

With a wide range of optical distributions Cree® provides new possibilities for highly-optimized target illumination performance and the flexibility needed for application-specific requirements. Cree precision optics are able - just as an example - to completely eliminate back-lighting or to highlight architectural features that you want to promote all while improving visibility and illumination performance.

Urban Landscapes

Cree Urban Series

Contemporary
- Contemporary conical design
- NanoOptic® Precision Delivery Grid™ optic
- Delivered Light Output: 5000, 7000 lumens
- Two different sizes available
- CRI: Minimum 70 CRI
- CCT: 3000K, 4000K, 5700K
- Luminous Flux control system available

Circular suspended
- Contemporary round design
- Suspended mounting systems
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K, 4000K, 5700K
- Luminous Flux control system available

Circular adjustable arm
- Contemporary round design
- Adjustable arm mounting
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K, 4000K, 5700K
- Luminous Flux control system available

Circular Post-top
- Contemporary round design
- Post-top mounting systems
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K, 4000K, 5700K
- Luminous Flux control system available

Cree OSQ Series
- Slim, low profile design
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI (4000K & 5700K), 80 CRI (3000K)
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous Flux control system available

Cree RKT Series
- Traditional post-top upgrade kit
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K or 4000K or 5700K
- Easy installation

Cree Square LED Mini
- Essential linear design
- Mounting systems: wall mount, adjustable arm
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous Flux control system available

Street and Roadway Application Guide
Case Study: Municipal Lighting  
Client: Comune di Selargius  
Product: Cree® RKT Series Luminaires, Cree® XSP Series Luminaires

A Solution for Every Ambient With an Eye on the Environment

Selargius is a small town at the seaside on the mediterranean island of Sardinia. Recently the municipality committed to reduce CO₂ emissions by a minimum of 20% until 2020 by joining the SEAPs program (Sustainable Energy Actions Plans promoted by the European Commission), starting with the replacement of more than 2500 lighting fixtures throughout the municipality.

More than 200 Cree® RKT Retrofit Kits have been selected for the urban city center and installed into traditional-shaped fixtures, blending in perfectly with the flair of the mediterranean ambience. Through the rest of the town nearly 2300 Cree® XSP Series street lighting luminaires were used with the various configurations that this series offers, tailoring the fixtures to the lighting requirements of the different street types, all while maintaining a consistent look throughout the town.

In environmental terms, the street-lighting installation will save 3832 tons of CO₂ throughout the installation’s lifetime and a 65-70% energy saving compared to the previous system for the town of Selargius.
Save More While making your Car Park more Welcoming

In outdoor areas using Cree LED fixtures and the right controls can make the difference. The right lighting attracts and welcomes your customer at night even from the street and guides them towards your spaces. White light plays a vital role in making people feel safe after dark. Its higher perceived brightness and superior colour rendering make it easier to distinguish objects, colours, shapes and people, improving safety of pedestrians and vehicles.

But with many facilities running all night through, facility managers need to look for ways to minimize operating costs. In combination with light control options Cree LED fixtures combine product efficiency, performance and longevity with significant energy and maintenance savings over the life of the installation — a combination that maximizes your bottom line for years to come.

Cree OSQ Series
- Slim, low profile design
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI (4000K & 5700K); 80 CRI (3000K)
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous flux control systems available

Cree XSP Series
- NanoOptic® Precision Delivery Grid™ optic
- CRI: Minimum 70 CRI
- CCT: 4000K (+/- 300K), 5700K (+/- 500K)
- Luminous flux control systems available

Cree Ledway Road
- Modular system (from 20 to 120 LED)
- Durable, die-cast aluminum housing
- Patented NanoOptic® Product Technology
- CRI: Minimum 70 CRI
- CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)
- Luminous flux control systems available
- Tool-less entry

Cree Edge™ High Output
- Designed to deliver high lumen packages with precise optical control
- Utilizes Cree TrueWhite® Technology
- CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K), 3000K (+/- 300K)
- Luminous flux control systems available

Car Park

Street and Roadway Application Guide
Make Your first Impression with Your Customer a Right One

Exterior lighting is a critical element in shaping a customer’s perception. Because of advances in technology, LEDs not only have the required intensity, but also superior optical control compared to conventional sources of light such as metal halide or high-intensity discharge lights. With our range of precise optics, Cree® LED luminaries illuminate your car park perfectly matching the application requirements, directing your customer the right way to entrances and points of interest. Installing Cree® LED lighting enhances your brand and reduces total cost of ownership and the carbon footprint, while providing a more inviting shopping experience for customers.

For this new retail store at Pisa, the client’s first store in Italy to be fully illuminated by LED, Cree installed outdoor lighting in the car park and strategic points of interest such as walkways, store entrances, billboards and building facade as well as the good receiving area.

Case Study: Retail Outdoor Lighting

Product: Cree® Ledway® Road Luminaires, Cree® 304 Series Luminaires

10 Years VIRTUALLY MAINTENANCE FREE 10 Years LIMITED WARRANTY 227 LUMINAIRES INSTALLED
Lower Operating Expenses While Meeting Sustainability Goals

The need to lower operating expenses is ever increasing and especially challenging with the unpredictable maintenance costs of HPS technology. Long-lasting Cree® LED street lights — backed by an industry-leading 10-year limited warranty — eliminate the routine expense of a crew and bucket truck, adding savings back to your bottom line. Our LED street lights not only last longer, they also use less energy, making the upgrade to Cree an ideal opportunity for cities to meet their sustainability goals, all while transforming neighborhoods with uniform white light.
Perfect Lighting and Natural Wonders — On This Roadway — You Can Have it All

The A24 motorway, also known as “Motorway of the parks”, is one of the few Italian motorways that runs mainly north-east, immersed in a stunning landscape, cutting through the Apennines mountain range.

Starting a few kilometers from the historic center of Rome, the A24 stretches 166km through an extraordinary territory between the Lazio and Abruzzo regions. Experience breathtaking views of six natural parks and the Gran Sasso massif, the highest peak in the Apennines, before reaching Teramo. Along the whole route, more than 1,400 Cree Ledway® Road luminaires have been installed at dense traffic areas, motorway entrances and exits, interchanges and near service areas. Thanks to the modular design of Cree Ledway® Road lighting, it was possible to configure the luminaires, featuring 20 to 120 LEDs, to the required lighting needs and desired luminous flux for each motorway section. With the Ledway® Road luminaire upgrade, the managing society Strada dei Parchi S.p.A anticipates a reduction in annual energy usage of 43% and 76% of maintenance savings while also eliminating 2,054 tons of CO₂ each year.
Safety First

Bright, inviting light on national roadways help keep vehicles safe and illuminated in the dark. Luminaires powered by Cree® provide exceptional color rendering and crisp white light enhancing public safety at night.

The advanced NanoOptic® Technology from Cree provides uniform on-target illumination that eliminates dark spots between fixtures for dramatically better visibility.

Cree® LED luminaires, backed by a 10-year limited warranty, offer energy-efficient and near maintenance free lighting for spaces where complex re-lamping operations means that a tunnel needs to be closed for many hours and require special machinery.

**Cree Ledway E-Tunnel**

- Modular system (from 20 to 120 LEDs)
- Durable, die-cast aluminum housing
- IP66 Rated
- Patented NanoOptic® Product Technology
- CRI: Minimum 70 CRI
- CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)
- Luminous flux control systems available
The Brenner motorway (or the A22 motorway) is one of the main roads of the Italian motorway network as it connects Italy with Austria and Germany. Heading South from the majestic Alps to Modena in the Po Valley, the Brenner motorway is one of the most important European roads for touristic and commercial traffic alike. Autostrada del Brennero S.p.A., the managing company for the motorway network, turned to Cree and the Cree Ledway® E-Tunnel to replace an old lighting system dating back to 1964 in two tunnels. Initially, the restructuring decided in 2007 involved the use two technologies: permanent LED installation and a reinforcement system with traditional sodium lamps. However, given the opportunity to invest more resources, the final installation was completed with Cree® LED luminaires only. After the installation of more than 650 fixtures, the result was more than positive.

The Cree® luminaires ensure a lifetime of more than 100,000 hours — a very significant fact considering the maintenance cost savings associated with the elimination of re-lamping operations in tunnels and additional savings from the decrease of energy consumption — up to 50%. Thanks to the new lighting system, drivers entering and leaving the tunnel find the lighting experience less blinding even while traveling in the bright Italian sunlight. While traveling in the tunnel, the white light inside provides good color rendering that allows clear visibility of the road and obstacles.
NanoOptic® Technology

With patented NanoOptic® Technology available in multiple distributions, Cree® outdoor LED luminaires provide precise optical control for exceptional application performance and energy savings. The NanoOptic® refractor system offers superior light control with more lumens delivered in the target area, improved uniformity ratios, and controlled high-angle brightness.

Colorfast DeltaGuard® Finish

Cree’s exclusive Colorfast DeltaGuard® Finish protects our LED outdoor fixtures without compromise. Immersive conditioning across 18 stages delivers an e-coat epoxy primer with an ultra-durable powder topcoat, providing unmatched protection against corrosion, UV light, fading and weathering complete with a 10 year limited warranty.

Cree TrueWhite® Technology

Cree TrueWhite® Technology provides exceptional color quality to lighting applications. Featuring a broad spectral power distribution, Cree TrueWhite® Technology delivers 90+ CRI, high R9 values, and accurate and consistent color. The result is high performing, beautiful white light that can dramatically improve the visual appearance of both interior and exterior spaces — all while offering significant energy savings compared to traditional technologies. Cree TrueWhite® Technology — Saving Energy Never Looked So Good.

Limited Warranty

Light your roadways with confidence. Cree offers a 10-year limited warranty that covers the broadest product range in the industry. As a leading innovator of LED chips, components and lighting, Cree has over 20 years of experience in commercial LED development, bringing an unprecedented level of expertise to all facets of the LED lighting design and development process. To learn more, please visit www.cree.com/lighting/products/warranty.

Whatever your project, whatever your budget - Visit cree-europe.com to learn more about how we can accomplish your goals together.
All Roads Lead to Savings

Visit www.cree-europe.com or contact a Cree lighting representative to learn more.